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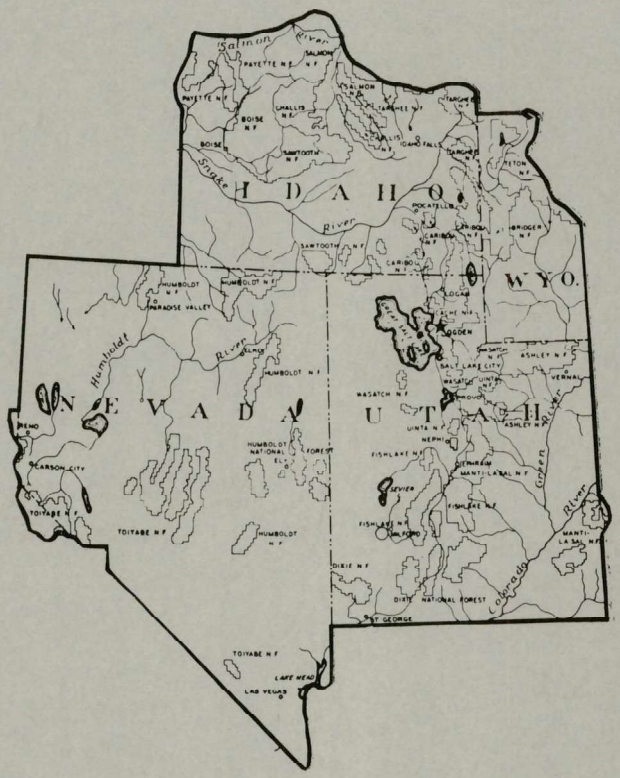
THE STATUS OF BARK BEETLES OTHER THAN MOUNTAIN PINE BEETLE, ENGELMANN SPRUCE BEETLE, AND DOUGLAS-FIR BEETLE

FOREST SERVICE REGION 4

November 1962

R. I. WASHBURN
Entomologist



BRANCH OF FOREST INSECT AND DISEASE
PREVENTION AND CONTROL

DIVISION OF TIMBER MANAGEMENT

Forest Service
U. S. Department of Agriculture
Ogden, Utah

TM-INSECT & DISEASE

THE STATUS OF BARK BEETLES OTHER THAN MOUNTAIN PINE BEETLE, ENGELMANN SPRUCE BEETLE, AND DOUGLAS-FIR BEETLE

FOREST SERVICE REGION FOUR

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INTRODUCTION

This report discusses the status of fir engraver, western pine, red turpentine, Ips, and ambrosia beetles in the territory covered by U. S. Forest Service, Region Four. Separate reports have been prepared for the mountain pine beetle, Engelmann spruce beetle, and Douglas-fir beetle, against which major control efforts have been directed recently. While the beetles discussed in this report are presently less destructive than the aforementioned three, they have in recent years destroyed or damaged large numbers of trees. Land managers are becoming increasingly concerned over the continuous drain on timber resources resulting from these bark beetle infestations.

The purpose of this report is to record the information available on the present status and possible trend of the various infestations caused by these bark beetles.

Beetles Infesting True Firs

Many thousands of true fir trees have been killed throughout the Region Four area during the past few years. Infestations vary from a few acres in size to hundreds of acres. The insects primarily responsible are the fir engraver beetle (Scolytus ventralis Lec.), western balsam bark beetle (Dryocoetes confusus Sw.), and Pityophtorus sp. Biological evaluations have shown that in some cases primary attacks are being made by two or more species in the same trees. Other fir stands evaluated showed trees had been killed by disease organisms or were victims of a physiological condition.

New infestation centers of fir engraver beetle were detected throughout the Region. The oldest infestations have, in most instances, remained within their previous boundaries or increased only slightly.

Many of these infestations are in inaccessible areas where control is not feasible; consequently, ground evaluations are made only on those infestations where this service is requested by the land manager.

A serious infestation of the fir engraver beetle (Scolytus ventralis Lec.) was detected this year on the Fishlake National Forest. The infestation is east of Filmore, Utah, in Reese Canyon and extends south to Sand Rock Ridge. Rough estimates show that 3,500 white fir are currently infested on approximately 4,500 acres. Approximately 10 to 20 percent of the stand has been killed. Brood densities are high. It appears likely that the infestation will continue as an epidemic with an increasing trend.

A number of factors are causing mortality of white and alpine firs on National Forest and intermingled state and private lands on the Mono Division of the Toiyabe National Forest. Thousands of trees have been killed by the fir engraver beetle (Scolytus ventralis Lec.) and western balsam bark beetle (Dryocoetes confusus Lec.). Many of the infested groups have increased in size annually since 1959. Groups of faded trees covering as much as three acres are not uncommon. Along the east side of Lake Tahoe, small groups of white fir have suffered combined attacks from Pityophthorus sp., pigeon horntail wasp (Sirex logiconda Middlekauff), and a few species of cerambycids and buprestids. Where such a combination of factors is causing mortality, it is probable the condition will be temporary and will not persist more than one or two years.

An epidemic infestation of Scolytus ventralis Lec. along the main Bryce Canyon National Park Highway has been treated annually for the last few years. The beetle now seems to be decreasing in the Park; however, limited treating would be justified to finish up the excellent job of control which has been done.

Other National Forest and Park Service lands in the Region have sizeable fir engraver infestations. Some of the most noticeable occur on the Cassia Division of the Sawtooth, Wyoming Division of the Bridger, Dixie Division of the Dixie, Provo River on the Wasatch, Snake Range of the Humboldt, and the Uinta National Forest. The Timpanogos Cave National Monument near Provo, Utah, also has had a serious fir engraver problem for several years.

Bark Beetles in Ponderosa Pine

Inspections of fire-weakened ponderosa pine on the Boise National Forest near Idaho City, Idaho, in 1960 showed many trees being killed by the western pine beetle (Dendroctonus brevicomis Lec.). Subsequently, the population that developed attacked many of the

adjacent, healthy ponderosa pine trees. This year in spite of a noticeable increase in the number of "red tops," few green trees were attacked. Most of the mature ponderosa pine trees that were killed by the western pine beetle also contained red turpentine beetle (Dendroctonus valens Lec.) and Ips sp.

On the Payette National Forest many scattered singles and groups of faded ponderosa pine trees were found to contain Ips sp., red turpentine beetle, and western pine beetle. These infestations appear static; they will probably be short-lived and should not persist for more than one or two years.

On the Toiyabe National Forest and on adjacent and intermingled state and private lands, a few concentrated groups of ponderosa pine were killed by Ips sp., red turpentine beetle (Dendroctonus valens Lec.), and mountain pine beetle (Dentroctonus monticolae Hopk.). One Ips infestation in a logging area in Jacks Valley near Carson City, Nevada, showed a potential to increase. Nevada State Foresters encouraged the landowners to log the infested trees and the effect of the resulting effort will be evaluated next year. Only occassional infested ponderosa pine trees were found scattered along the remainder of the fringe timber facing the valley from the California border to the north of Reno, Nevada.

Western pine beetle and mountain pine beetle populations in the Crystal Bay infestation have been reduced considerably by the removal of infested trees in a real estate development. Road building, opening of the stand by removal of both green and dead trees, and some complete clearing have materially altered the stand. It is difficult to predict the effect that this operation will have on the health and susceptibility of the remaining trees. Some of the remaining trees will undoubtedly respond to release; others may be weakened by the disturbance, especially where soil moisture conditions have been changed. Trees damaged by equipment are likely to be attacked by bark beetles and diseases, or both. In and around First and Second Creeks the old infestation still persists. Reduction of bark beetle broods in this area would do much to minimize the danger of the "cleaned" area becoming reinfested.

Ips in Pinyon Pine

Many pinyon pine trees have been killed by Ips sp. throughout southern Utah. Increased mortality is especially noticeable in Paragonah Canyon east of Paragonah, Utah, where many large groups of trees have been attacked and killed this year. Groups of Ips-killed pinyon pine are also common east of Panguitch along the highway to Panguitch Lake and southeast of Escalante, Utah. Populations of clerids, histerids, and Medetera sp. have increased

over last year. If these predators continue to increase, they may become important factors in reducing the Ips populations. Early spring evaluations will be necessary before the trend of the Ips in pinyon pine can be predicted.

Spring suppression measures of cutting and burning pinyon pines infested with Ips appear to have been quite successful in Arches National Monument in southeastern Utah. Near the Natural Bridges National Monument in the same locality, widely scattered "faders" were observed this fall in the pinyon type; and the fading appears to be characteristic of Ips sp. The infestations outside of the National Monument may spread into the Monument.

No sizeable infestation of Ips in pinyon pine was detected in Nevada this year.

Ambrosia Beetles in Aspen

Several infestations of ambrosia beetle (Tripodendron sp.) were detected in aspen stands on the Dixie National Forest in southern Utah. Two areas of approximately 500 acres each are known to be infested. One is in Bunker Creek west of Panguitch Lake; the other is near Jones Corral west of Antimony, Utah. The Jones Corral infestation is in a stand of aspen which has been sold to an excelsior manufacturer. Use of aspen for excelsior demands clear, white wood without stain or blemish. The Trypodendron galleries will, of course, materially affect the quality and grade of the finished product. Attacked trees occur inscattered groups and no tree mortality is evident. The course of these outbreaks is difficult to predict, but periodic examinations will be made to detect any change in present status.

DISCUSSION AND SUMMARY

Large volumes of timber are killed annually by bark beetles other than mountain pine beetle, Engelmann spruce beetle, and Douglas-fir beetle.

Mortality of true firs caused by fir engraver beetles has increased in many areas within the Region. Examinations of infested trees show that in many cases more than one insect has been responsible.

Some mature and second-growth ponderosa pines have been killed by Ips sp. and Dendroctonus sp. in southern Idaho and western Nevada. Altogether, several thousand trees were killed this year. These infestations are not expected to persist for more than two or three years at the most.

Ips sp. infestations in pinyon pine areas in southern Utah caused considerable mortality this year. The number of pinyon pine killed in these areas has increased yearly. Predator populations have built up recently, but their significance in reduction of Ips populations has not been determined. Ips sp. appear rather quiescent in the Nevada pinyon pine stands this year. The importance of pinyon pine for Christmas trees is increasing throughout Utah and Nevada.

Two known infestations of ambrosia beetles infesting aspen were detected in southern Utah this year. To date, there is no tree mortality; however, evaluations indicate the possibility of some aspen being killed next year if the infestation continues.

Many of the destructive insects mentioned in this report have received little attention in the past, and it is difficult to accurately assess their destructive potentials. Because of a lack of data, some of the evaluations in this report are based on judgment. As experience increases and additional data are gathered and recorded, it should be possible to predict more successfully the likely courses of such outbreaks.

DISTRIBUTION LIST FOR EVALUATION REPORTS

Alphabetically by state) orest and Range Experiment Stations	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Richard M. Hurd, Director Alaska Forest Research Center P. O. Box 740 Juneau, Alaska	/	/	/	/	/	/
Keith Arnold, Director Pacific Southwest Forest and Range Experiment Station Stead Bldg. 1960 Addison Street P. O. Box 245 Berkeley 1, California	/	/	/	/	/	/
Raymond Price, Director Rocky Mountain Forest and Range Experiment Station 221 Forestry Bldg. Colorado State University Fort Collins, Colo.	/	/	/	/	/	/
Phillip A. Briegleb, Director Southern Forest and Range Experiment Station 704 Lowich Bldg. 2026 Charles Ave. New Orleans 13, Louisiana	/	/	/	/	/	/
Marlyn B. Dickerman, Director Lake States Forest and Range Experiment Station St. Pauls Campus University of Minnesota St. Paul 1, Minn.	/	/	/	/	/	/

Forest and Range Experiment Stations	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Thomas F. McLintock, Director Southeastern Forest and Range Experiment Station 223 Federal Bldg. P. O. Box 2570 Asheville, North Carolina	/	/	/	/	/	/
Richard D. Lane, Director Central States Forest and Range Experiment Station 111 Old Federal Bldg. Columbus 15, Ohio	/	/	/	/	/	/
Robert W. Cowlin, Director Pacific Northwest Forest and Range Experiment Station 809 NE Sixth Ave. P. O. Box 4059 Portland, Oregon	/	/	/	/	/	/
Ralph W. Marquis, Director Northeastern Forest and Range Experiment Station 102 Motors Ave. Upper Darby, Pa.	/	/	/	/	/	/
Joseph F. Pechanec, Director Intermountain Forest and Range Experiment Station 25th Street and Adams Ave. Ogden, Utah	/	/	/	/	/	/

Regional Foresters	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Charles L. Tebee, Regional Forester Region 1, Northern Region Federal Bldg. Missoula, Mont.	/	/	/	/	/	/
Donald E. Clark, Regional Forester Region 2, Rocky Mountain Region Denver Federal Center Bldg. 85, Denver 25, Colo.	/	/	/	/	/	/
Fred H. Kennedy, Regional Forester Region 3, Southwestern Region Federal Building 517 Gold Street, SW Albuquerque, New Mexico	/	/	/	/	/	/
Charles A. Connaughton, Regional Forester Region 5, California Region 630 Sansome Street San Francisco 11, Calif.	/	/	/	/	/	/
J. Herbert Stone, Regional Forester Region 6, Pacific Northwest Region 729 N.E. Oregon Street P. O. Box 4137 Portland 8, Oregon	/	/	/	/	/	/

Others	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Mr. Roger L. Guernsey, State Forester 801 Capitol Boulevard Boise, Idaho	2	2	2	2	2	2
George Zappettini, State Forester Division of Forestry Dept. of Conservation and Natural Resources Carson City, Nevada	2	2	2	2	2	2
Paul Sjoblom, State Forester 525 West 13 South Salt Lake City 15, Utah	2	2	2	2	2	2
Regional Director, Region Four National Park Service 180 Montgomery Street San Francisco, California					2	2
Regional Director, Region Two National Park Service 307 Federal Office Building Omaha 2, Nebraska	3	3	3		3	3
Regional Director, Region Three National Park Service Sante Fe, New Mexico	4	4	4		4	4

Others	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Area Administrator Bureau of Land Management Colorado State Office Gas and Electric Building 910 - 15th Street Denver, Colorado	3	3	3	-	3	3
Mr. R. C. Bechtel Nevada State Dept. of Agriculture P. O. Box 1209 Reno, Nevada	1	1	1	1	1	1
State Director Bureau of Land Management 50 Ryland Street Reno, Nevada	3	3	3		3	3
Area Administrator ~~District Office~~ ~~Bureau of Land Management~~ Ely, Nevada						
Mr. M. M. Zollar, Superintendent Uintah and Ouray Agency Bureau of Indian Affairs Fort Duchesne, Utah	3	3	3		3	3
Area Administrator Bureau of Land Management 310 Boston Building Salt Lake City, Utah	3	3	3		3	3

Others	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
Pinedale District Office Bureau of Land Management P. O. Box 188 Pinedale, Wyoming	3	3	3		3	3
Rock Springs District Office Bureau of Land Management P. O. Box 1088 Rock Springs, Wyoming	3	3	3		3	3
State Director Bureau of Land Management P. O. Box 929 Cheyenne, Wyoming						
John R. Stevenson Intermountain Lumber Co. P. O. Box 1347 Missoula, Montana						
H. J. Heikkenen University of Washington College of Forestry Seattle 5, Washington						

Others	Mtn. Pine Beetle	Douglas-fir Beetle	Engelmann Spruce Beetle	Spruce Budworm	Other Bark Beetles	Defoliators
John R. Stevenson Intermountain Lumber Co. P. O. Box 1347 Missoula, Montana	1	1	1	1	1	1
Mr. H. J. Heikkenen Professor of Forest Entomology University of Washington College of Forestry Seattle 5, Washington	2	2	2	2	2	2
Mr. Ariel M. Jorgensen Commissioner of Plant Industry Department of Agriculture State of Utah 412 Capitol Building Salt Lake City, Utah	1	1	1	1	1	1
Mr. Harry E. Gallaway, Secretary Western Plant Board Nevada State Department of Agriculture P. O. Box 1209 Reno, Nevada	1	1	1	1	1	1